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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,665	11/09/2000	Dai Gil Lee	89799.167400	4795

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EXAMINER

PEREZ, GUILLERMO

ART UNIT PAPER NUMBER

2834

DATE MAILED: 12/05/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/710,665

Applicant(s)

LEE ET AL.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-4, drawn to a squirrel cage rotor, classified in class 310, subclass 211.
- II. Claims 5-6, drawn to a method of making a squirrel cage rotor, classified in class 29, subclass 598.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the rotor can be made by molding the conductor bars and end rings into an integral piece; forming the composite core in a mold; mounting the molded bars and rings on the composite core.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Thomas Fitzgerald on November 26, 2001 a provisional election was made without traverse to prosecute the invention of Dai Gil Lee et al., claims 1-4. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

Figures 1-6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Specification

The disclosure is objected to because of the following informalities: on page 2, line 1 the word "deteriorateddynamic" needs correction; on page 3, line 24 the word "hoes" needs correction; on page 6, line 12 the word "converitiohal" needs correction; on page 8, line 2 the phrase "This power to should be" needs to be revised; on page 8, line 17 the phrase "fixed in the slots 134 try polymer resin" needs to be revised; on page 9, line 5 the word "mrtor" needs to be corrected.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliman et al. (U. S. Pat. 5,990,588) in view of W. H. Mc Garvey et al. (U. S. Pat. 3,246,188) and further in view of Ward et al. (U. S. Pat. 5,211,896).

Kliman et al. disclose a composite squirrel cage rotor, comprising:
a rotating shaft (114);

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a polymer resin part (112) containing powder of high magnetic permeability (column 6, lines 58-66); and

a conductor (116) positioned around the outer part of the polymer resin part (112), formed of material having high electric conductivity (column 6, line 66 through column 7, line 3). Kliman et al. disclose that chopped fibers (column 6, lines 11-14) are added to said polymer resin part (112) in order to enhance the mechanical properties such as thermal stability and stiffness of the rotor structure.

However, Kliman et al. do not disclose a squirrel cage conductor provided with a plurality of axial slots. Kliman et al. do not disclose that the powder of high magnetic permeability is uniformly distributed in the polymer resin part. Kliman et al. do not disclose that the slots of the squirrel cage conductor are provided with a plurality of heat pipes, respectively.

W. H. Mc Garvey et al. disclose a squirrel cage conductor provided with a plurality of axial slots (18). W. H. Mc Garvey et al. disclose that the slots (18) of the squirrel cage conductor are provided with a plurality of heat pipes (16), respectively. The invention of W. H. Mc Garvey et al. has the purpose of ventilating the machine during operation.

Ward et al. disclose that the powder of high magnetic permeability is uniformly distributed in the polymer resin part (column 5, lines 33-37). The invention of Ward et al. has the purpose of improving the consistency of the performance of the core in use.

It would have been obvious at the time the invention was made to modify the squirrel cage rotor of Kliman et al. and provide it with the slots, heat pipes and particle

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uniformity disclosed by W. H. Mc Garvey et al. and Ward et al. for the purpose of ventilating the machine during operation and improving the consistency of the performance of the core in use.

2. Claim 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliman et al. in view of W. H. Mc Garvey et al. and further in view of Ward et al. as applied to claims 1 and 4 above, and further in view of Boyarkin et al. (SU 1385187).

Kliman et al., W. H. Mc Garvey et al. and Ward et al. disclose a squirrel cage rotor as described on item 1 above. However, neither Kliman et al., W. H. Mc Garvey et al. nor Ward et al. disclose an inner core of high magnetic permeability so as to improve the performance of the motor by increasing the magnetic flux density of the rotor.

Boyarkin et al. disclose an inner core (7) of high magnetic permeability so as to improve the performance of the motor by increasing the magnetic flux density of the rotor. The invention of Boyarkin et al. has the purpose of improving rotor working reliability and economy of magnetic core material.

It would have been obvious at the time the invention was made to modify the squirrel cage rotor of Kliman et al., W. H. Mc Garvey et al. and Ward et al. and provide it with the inner core disclosed by Boyarkin et al. for the purpose of improving rotor working reliability and economy of magnetic core material.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
November 28, 2001


NESTOR RAMIREZ
SUPERVISOR
TECHNOLOGY CENTER
NOV 28 2001